ABSTRACT

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Monitoring using laser scanning – case study of Watts Towers

This paper will explore the use of laser scanning as a part of a controlled survey to measure movement of buildings and structures over time.

In 2011 a survey was carried for the Watts Towers structure. Watts Towers installation consists of 17 major sculptuires constructed of structural steel covered with mortar decorated with broken glass, sea shells, generic pottery and tile. It was constructed in the nineteen twenties, is both a very important cultural landmark and a cultural icon for Los Angeles. Because of its age and construction it is in urgent need of an overall assessment of current condition. It has been subject to penetration from weather, seismic action and always at the mercy of vandalism.
This had to be cost effective, reasonably simple to execute and repeatable. Survey was needed to establish baseline data for all future monitoring; to provide an accurate set of base data to enable the assessment audit of current site condition, monitor both previous and future structural movement in selected parts of the structure; form the foundation of a management plan and the tool to plan and carry out a preservation strategy for the professional team.
We will also explore in a wider context how laser scanning is being used to provide base data for the foundation and execution of a project involving an existing structure.

Biography

Christopher Gray FRICS
Chris is a chartered surveyor and an international specialist in the measurement of existing complicated, often historic structures. His career includes, head of survey procurement for English Heritage; survey consultant to CADW (Welsh Heritage); Deputy Director of Documentation at the Getty Conservation Institute; Director of Preservation and 3D Survey at GBG; and currently Director of Business Development for the Mollenhauer Group in Los Angeles and the UK.
Chris has managed the survey of hundreds of historic buildings and include Stonehenge, Dover Castle, The Hieroglyphic stairway at Copan, the Rose Bowl in Pasadena; throughout his career he has championed appropriate uses of technology from terrestrial photogrammetry, laser scanning and currently exploring use for BIM and 3D modelling.
He is the current US delegate to CIPA; past Board member for APTI, president of WCAPT, Fellow and member of the Global Board of Directors for the Royal Institution of Chartered Surveyors.